63D CONGRESS, 2d Session. } HOUSE OF REPRESENTATIVES. { DOCUMENT No. 817.

BLACK LAKE HARBOR, MICH.

LETTER

FROM

THE SECRETARY OF WAR,

TRANSMITTING,

WITH A LETTER FROM THE CHIEF OF ENGINEERS, REPORT ON PRELIMINARY EXAMINATION OF BLACK LAKE HARBOR, MICH., WITH A VIEW TO OBTAINING A UNIFORM DEPTH OF 21 FEET FROM LAKE MICHIGAN TO THE TURNING BASIN OPPOSITE THE CITY OF HOLLAND.

MARCH 9, 1914.—Referred to the Committee on Rivers and Harbors and ordered to be printed, with illustration.

WAR DEPARTMENT,
Washington, March 9, 1914.

The SPEAKER OF THE HOUSE OF REPRESENTATIVES.

SIR: I have the honor to transmit, herewith, a letter from the Chief of Engineers, United States Army, dated 7th instant, together with copy of report from Lieut. Col. J. C. Sanford, Corps of Engineers, dated September 12, 1913, with map, on preliminary examination of Black Lake Harbor, Mich., made by him in compliance with the provisions of the river and harbor act approved March 4, 1913.

Very respectfully,

LINDLEY M. GARRISON,
Secretary of War.

WAR DEPARTMENT,
OFFICE OF THE CHIEF OF ENGINEERS,
Washington, March 7, 1914.

From: The Chief of Engineers, United States Army.
To: The Secretary of War.
Subject: Preliminary examination of Black Lake Harbor, Mich.

1. There is submitted herewith, for transmission to Congress, report dated September 12, 1913, with map, by Lieut. Col. J. C. Sanford, Corps of Engineers, on preliminary examination of Black

Lake Harbor, Mich., with a view to obtaining a uniform depth of 21 feet from Lake Michigan to the turning basin opposite the city of Holland, called for by the river and harbor act approved March 4, 1913.

2. The present project for improvement of this locality, which is officially known as Holland Harbor, was adopted by the act of March 3, 1899, and as modified in 1905 and 1907 provides for a channel 16 feet deep, protected on the outside by two converging piers and on the inside by piers and revetments. The city of Holland is at the eastern end of Black Lake, about 5 miles from the entrance. The depths in the lake are generally in excess of 20 feet, except in the immediate vicinity of the city, where the depths are 12 to 14 feet. The district officer reports that there appears to be no present necessity for a uniform depth of 21 feet from Lake Michigan to the turning basin opposite the city of Holland; but he is of opinion that the locality is worthy of improvement by dredging an approach channel 16 feet deep as far as opposite the wharves, and by dredging a suitable turning basin, which would be necessary in order to utilize the deeper approach channel. The division engineer recommends that the extent and cost of the proposed work be ascertained for determination of the question of worthiness.

3. This report has been referred, as required by law, to the Board of Engineers for Rivers and Harbors and attention is invited to its report herewith dated December 30, 1913. The board states that the commerce of the harbor is small, when compared with expenditures already made, and shows a tendency to decrease. The improvement now contemplated is a channel for the purpose of reaching existing wharves and is in the nature of a terminal facility. The board is of opinion that this channel, if required, should be provided by local interests, and it therefore expresses the opinion that it is not advisable for the United States to undertake the proposed improvement.

4. After due consideration of the above-mentioned reports, I concur with the views of the Board of Engineers for Rivers and Harbors and therefore report that the improvement by the United States of Black Lake Harbor, Mich., with a view to obtaining a uniform depth of 21 feet from Lake Michigan to the turning basin opposite the city of Holland, or with a view to obtaining a depth of 16 feet, as proposed by the district officer, is not deemed advisable at the present time.

DAN C. KINGMAN,
Chief of Engineers, United States Army.

REPORT OF THE BOARD OF ENGINEERS FOR RIVERS AND HARBORS.

[Third indorsement.]

BOARD OF ENGINEERS FOR RIVERS AND HARBORS,
December 30, 1913.

To the CHIEF OF ENGINEERS, UNITED STATES ARMY:

1. This examination of Black Lake Harbor, Mich., is called for with a view to obtaining a uniform depth of 21 feet from Lake Michigan to the turning basin opposite the city of Holland. The

entrance to this harbor, officially known as Holland Harbor, has been under improvement for a number of years. The present project, adopted in 1905, as subsequently modified, provides for a channel 16 feet deep, protected on the outside by two converging piers and on the inside by piers and revetments. There had been expended to June 30, 1912, on this project, about $446,000. The total expenditures on the harbor have been in excess of $750,000. The existing project has been completed.

2. The present commerce is reported as amounting to 34,392 tons, and while previous statistics appear somewhat unreliable, they indicate that the commerce is decreasing. Practically all the waterborne commerce of Holland is carried on at the Graham & Morton Dock and the Harrington Dock. When these docks were built, the depth was sufficient, as light-draft boats were used. The desire for increased depth is due to the recent adoption of larger vessels of greater draft.

3. The city of Holland, with a population of about 10,500, is located at the eastern end of Black Lake Harbor, about 5 miles from the entrance. Except in the immediate vicinity of the city of Holland, where the depths are from 12 to 14 feet, the depths in the lake are in excess of 20 feet. There is no turning basin opposite the city of Holland, as might be inferred from the language of the act. No complaint has been made of the present depth of 16 feet at the entrance, and no demand is now made for a greater depth in the improvement desired at the city of Holland.

4. In view of difficulties experienced by the vessels now in use, the diminution in the number of light-draft vessels available, and the belief that the improvement of Holland Harbor by the Government is intended to provide for the water commerce of the city of Holland, the district officer is of opinion that the locality is worthy of improvement by dredging a deeper approach channel as far as the wharves and by dredging a suitable turning basin, both to a depth of 16 feet, to correspond with the present depth at the entrance to the harbor. To determine the cost, he recommends a survey, in which the division engineer concurs.

5. The board was not convinced from the information presented of the advisability of the United States undertaking the improvement contemplated by the district officer, and interested parties were so informed and given an opportunity of presenting statements and arguments to the board bearing upon the necessity and advisability of the United States undertaking this improvement, but no communications on the subject have been received.

6. The United States has provided at great expense a suitable entrance to Black Lake Harbor. This harbor or lake is about 5 miles in length, with ample depths except at the extreme upper end, opposite the city of Holland. The improvement desired is the dredging of a channel in this upper part of the lake and of a turning basin to be used in connection therewith. The commerce of the harbor is small when compared with the expenditures already made, and shows a tendency to decrease. The improvement now contemplated is a channel for the purpose of reaching existing wharves and is in the nature of a terminal facility, which, if required, should be provided by local interests. Moreover, there is nothing to indicate that if the work were done it would result in a commensurate increase in com-

merce. There appears to be no sufficient reason in this case to depart from the custom observed in the past at this harbor of limiting Federal expenditures to the entrance.

7. In view of the foregoing, the board reports that in its opinion it is not advisable for the United States to undertake the improvement of Black Lake Harbor, Mich., "with a view to obtaining a uniform depth of 21 feet from Lake Michigan to the turning basin opposite the city of Holland," or with a view to obtaining a depth of 16 feet, as contemplated within.

8. In compliance with law, the board reports that there are no questions of terminal facilities, water power, or other related subjects which could be coordinated with the suggested improvement in such manner as to render the work advisable in the interests of commerce and navigation.

For the board:

W. M. Black,
Colonel, Corps of Engineers,
Senior Member of the Board.

PRELIMINARY EXAMINATION OF BLACK LAKE HARBOR, MICH.

United States Engineer Office,
Grand Rapids, Mich., September 12, 1913.

From: The District Engineer Officer.
To: The Chief of Engineers, United States Army
(Through the Division Engineer).
Subject: Preliminary examination of Black Lake Harbor, Mich.

1. In accordance with department instructions of March 18, 1913, the following report is submitted on preliminary examination of Black Lake Harbor, Mich., with a view to obtaining a uniform depth of 21 feet from Lake Michigan to the turning basin opposite the city of Holland.

Provision for this examination was made in the river and harbor act of March 4, 1913. The locality is shown in a general way on Lake Survey Chart No. 76 (Coast Chart No. 6, Lake Michigan, new), and in detail on Lake Survey Chart No. 763, "Black Lake and Holland." A tracing with vicinity sketch accompanies this report.

2. The mouth of this harbor, officially known as Holland Harbor, Mich., is distant by water, measured between Lake Michigan entrances, about 7 miles from Saugatuck Harbor on the south, 20 miles from Grand Haven Harbor on the north, 94 miles from Chicago, and 86 miles from Milwaukee. This harbor has been improved by the Government by the construction of a channel about 2,600 feet in length, connecting deep water in Lake Michigan with deep water at the west end of Black Lake. The latter lake is about 5 miles in length and about 1,000 to 3,000 feet in width, with a channel narrow in places, having a depth of 20 feet or more, except in the vicinity of the docks at Holland at the east end of the lake, where the depths are from 12 to 14 feet. The east end of the lake above the docks at Holland is shallow and marshy. While the city of Holland extends to the head of the lake, the docks have been located, with a view to getting sufficient depth of water, at a point considerably below the center of the city. On the north and south sides of the improved entrance channel from Lake Michigan, are respectively

the summer resorts of Ottawa Beach and Macatawa Park; the former is the terminus of a disused branch of the Pere Marquette Railroad; the latter is the terminus of a branch of the Grand Rapids, Holland & Chicago Electric Railway, which branch connects it with Holland and thus with Grand Rapids and Saugatuck. The city of Holland is in Ottawa County and is the outlet of a very productive and well cultivated agricultural and fruit district. The population of Holland in 1910 was 10,490, and in 1900, 7,790. The population of Ottawa County in 1910 was 45,300, and in 1900, 39,670. Holland is one of the principal ports of Grand Rapids (a city having a population in 1910 of 112,570), being connected with it by the Pere Marquette Railroad and by the Grand Rapids, Holland & Chicago Electric Railway, which furnishes an excellent passenger, freight, and express service, its tracks being carried at Holland and at Macatawa to the wharves of the Graham & Morton Transportation Co. On account of the excellence of this service, a large amount of the traffic between Grand Rapids and Chicago goes via Holland. The most used wharves at Holland are those of the Graham & Morton Transportation Co. and the Harrington coal dock. The "turning basin opposite the city of Holland," referred to in the act, consists of the portion of Black Lake in front of the above-named wharves, the depths being, as previously stated, from 12 to 14 feet. While the wording of the act would seem to imply an existing turning basin opposite the city of Holland, having a depth of 21 feet, no such basin exists. No artificial turning basin has been constructed, nor is there any naturally deep area opposite the city of Holland, which is adapted for use as a turning basin and could therefore be properly so designated.

3. When the improvement was begun by the United States in 1867 there was a narrow channel about 5½ feet deep between inexpensive pier structures built by local interests. The original project, adopted in 1867 and amended several times up to 1892, provided for a channel 12 feet deep from Lake Michigan to the outer end of Black Lake, with piers and revetments 160 to 213 feet apart. From 1867 to 1880 the United States built a total of 1,854 linear feet of piers and revetments on the north side and 1,691 feet on the south side. Up to March 3, 1899, there had been expended upon this project the sum of $304,215.30, of which $127,597.50 was for maintenance. The present project, adopted March 3, 1899, and modified in 1905 and 1907, provides for a channel 16 feet deep, with outside converging piers 300 feet apart at the outer end and 740 feet apart at the inner end where connected with the outer ends of the inside piers and revetments, with a clear width of about 205 feet at the outer end and 162 feet at the narrowest place. The works provided for by the approved project are completed and present operations are confined to maintenance. The expenditures upon this project from March 3, 1899, to June 30, 1912, have been $446,117.42, of which $131,109.43 was for maintenance.

The total expenditures as above, from 1867 to 1912, have been $750,334.72, of which $258,706.93 have been for maintenance. The report upon which the present project is based is published in full in the Annual Report of the Chief of Engineers for 1897, pages 2950–2951, and in House Document No. 272, Fifty-fourth Congress, second session; the Annual Report of the Chief of Engineers for 1905, pages 2176–2177, contains a drawing and description of the adopted plan.

4. The following are the commercial statistics for this harbor, for the calendar year 1912:

Entrances and clearances:		
Total	number	780
Steam	do	774
Sail	do	6
Tonnage		772,096
Freight in tons of 2,000 pounds:		
Received		19,199
Shipped		15,193
Total		34,392

Commercial statistics for former years, furnished largely by local parties, are believed to be so unreliable that a fair comparison of traffic by years, by the use of these figures, is not practicable. With the exception of an occasional vessel, carrying crushed stone, lumber, or coal, the present water-borne traffic is carried on by the boats of the Graham & Morton Transportation Co., operating between Holland and Chicago. The boats of this line vary in length from 214 feet to 291 feet, and in gross tonnage from 1,148 to 3,061 tons. The largest of the boats, the *City of Grand Rapids*, has a maximum loaded draft of about 15 feet.

5. The fluctuation of water surface is that of Lake Michigan, and in recent years varied from about 0.5 to 1.5 feet, during the navigation season, below mean lake level; temporary variations, due to continued strong winds from one direction, may at times cause a change of level of about 2 feet in either direction. The soundings given on inclosed tracing are reduced to mean lake level (for period 1860–1875, 581.63 feet above mean tide at New York City); the soundings in Black Lake are reduced from those of Lake Survey Chart No. 763, those between the entrance piers and in Lake Michigan are from survey of April 30–May 3, 1913. There are no bridges over the entrance or Black Lake.

6. In order to ascertain just what is desired, and the reasons therefor, a letter was written on May 13, 1913, to Mr. Austin Harrington, president Holland Board of Trade (copy [1] inclosed), to which Mr. Harrington replied on May 24, 1913, inclosing letter from Mr. J. S. Morton, president, Graham & Morton Transportation Co. (copy [1] of reply and its inclosure accompanying). No public hearing was held, but a conference was held on May 21, 1913, by appointment with the harbor committee of the city council, of which Mr. Harrington is a member; Mr. J. S. Morton was also present. It was stated that these gentlemen represented the parties interested in the proposed improvement. It was learned at this conference that practically all the water commerce of Holland is carried on at the Graham & Morton Dock and the Harrington Dock. At the latter dock all freight vessels are allowed to land under uniform wharfage charges. This wharf is used by the municipality for landing crushed stone. All the coal brought to Holland by water is landed here and handled by Mr. Harrington. The fact was brought out that when the two docks mentioned were built, the depth of water in the approaches was sufficient for the boats then used. Since that time, larger steamers have been built by the Graham & Morton Co., which frequently ground in approaching or leaving the wharf; also that, fo

[1] Not printed.

handling coal at the Harrington Wharf it is becoming very difficult to secure vessels having a loaded draft of less than 16 feet. Mr. Morton stated that, with a greater depth of water in the upper part of the lake, his company would probably establish a coaling wharf, to which coal would be brought by vessel. It was also stated that both the Graham & Morton Co. and Mr. Harrington had done extensive dredging in front of their wharves, giving a depth of 16 feet for vessels to land. If these wharves have to be moved to a point farther down the lake, where better depths could be secured, it would not only involve large expense and a loss of the extensive improvements in the way of buildings and railroad connections made on them, but it would also carry them farther away from the center of the city, and thus be disadvantageous to the citizens. It was further learned at the conference that the depth of 16 feet in the entrance channel is satisfactory for present commerce, provided this depth is constantly maintained. No complaint was made in regard to the past maintenance of this channel. It was stated that a depth of 21 feet was asked in order to provide against shoaling and to insure a depth of 16 feet at all times, and that what was desired for the upper part of the lake was a dredged channel and turning basin, in which a depth of 16 feet could always be counted on.

Since the conference it has been learned that Mr. Harrington's reason for not bringing any coal in 1912 to Holland by vessel was that he was unable to secure a self-unloading boat of a size that could reach his dock. He states that the only boat offered him of this description was one that was too large. From all the information available in the commercial statistics for the years 1907–1912, the following coal has been received by vessel at Holland Harbor: 1,100 tons, 1,200 tons, 1,250 tons, 600 tons, 1,650 tons, and no tons, respectively, for the six years named. Of these amounts, Mr. Harrington received about 1,250 tons in each of the two years 1909 and 1911, the consignees for the other coal being unknown. It has also been learned from the Graham & Morton Transportation Co. that it has as yet no definite plans for either the location or the construction of a coal dock; but that it would be of suitable size, and located at a point most convenient for use by the steamers of this line, the coal to be received in cargoes of probably 1,000 to 2,000 tons per vessel load, but the quantity which it would be expected to receive annually is not stated.

7. At present there are no wharves owned by the public at which terminal facilities are extended to all on equal terms. The use of the Harrington Wharf by all freight vessels is permitted on equal terms, while small passenger steamers, etc., are allowed to land at this wharf without charge. There is at present no public space available for the construction of wharves. Public wharves could, however, when found necessary, be built below and above the two wharves mentioned, by acquiring riparian rights and filling in bights. There are no mechanical appliances for handling freight at the above private wharves. As all vessels are allowed to use the Harrington Wharf on equal terms, the construction of a public wharf does not now appear to be urgently required.

8. It appears that there is no present necessity of improving Black Lake Harbor, Mich., by securing "a uniform depth of 21 feet from Lake Michigan to the turning basin opposite the city of Holland." There seems, however, to be some reason for an improvement of less

magnitude. When the present project was adopted, there appears to have been a sufficient depth of water in the upper part of the lake to satisfy the needs of commerce. At the time the present project was adopted, and until about two years ago, there appears to have been sufficient depth of water to the docks at Holland for the boats then trading there. Within the last two years, however, on account of a low stage in Lake Michigan, and on account of the increasing size of vessels, and the dimunition in number of light-draft vessels available for carrying heavy cargoes, considerable trouble in connection with the small depth of water in the approach to the wharves has been experienced. As the improvement of Holland Harbor by the Government is intended to provide for the water commerce of Holland (including both the local commerce and a large amount of interstate commerce passing through that port), and as, under present conditions, the depths to that city are insufficient for economically carrying on that commerce, I am of the opinion that the locality is worthy of improvement by dredging a deeper approach channel as far as opposite the wharves, and by dreging a suitable turning basin, which would be necessary in order to utilize the deeper approach channel. A depth of 16 feet, which is the same as the project depth for the entrance channel from Lake Michigan, is, in my opinion, sufficient for present requirements. In order to estimate the cost of such work a survey is recommended.

9. There are no questions connected with water power or other related subjects involved in this examination.

J. C. SANFORD,
Lieutenant Colonel, Corps of Engineers.

[First indorsement.]

OFFICE DIVISION ENGINEER,
LAKES DIVISION,
Buffalo, N. Y., October 29, 1913.

To the CHIEF OF ENGINEERS:

1. Forwarded, concurring in the opinion of the district officer that Black Lake Harbor, Mich., is not worthy of improvement by the United States to obtain a uniform depth of 21 feet from Lake Michigan to the turning basin opposite the city of Holland.

2. If the alternative proposal herein discussed can be considered viz, that the existing 16-foot project for the improvement of Holland Harbor, Mich., be extended to include an approach channel and turning basin at the city wharves, it is recommended that the extension and cost thereof be ascertained by survey, for determination of the question of worthiness of improvement.

3. This report was returned to the district officer, with comments for revision, on September 18, and was received back October 27 in this form, without change of original date, viz: September 12, 1913.

J. G. WARREN,
Colonel, Corps of Engineers.

[For report of the Board of Engineers for Rivers and Harbors see page 2.]

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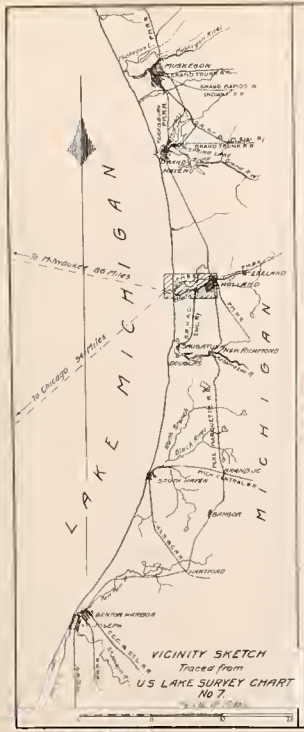
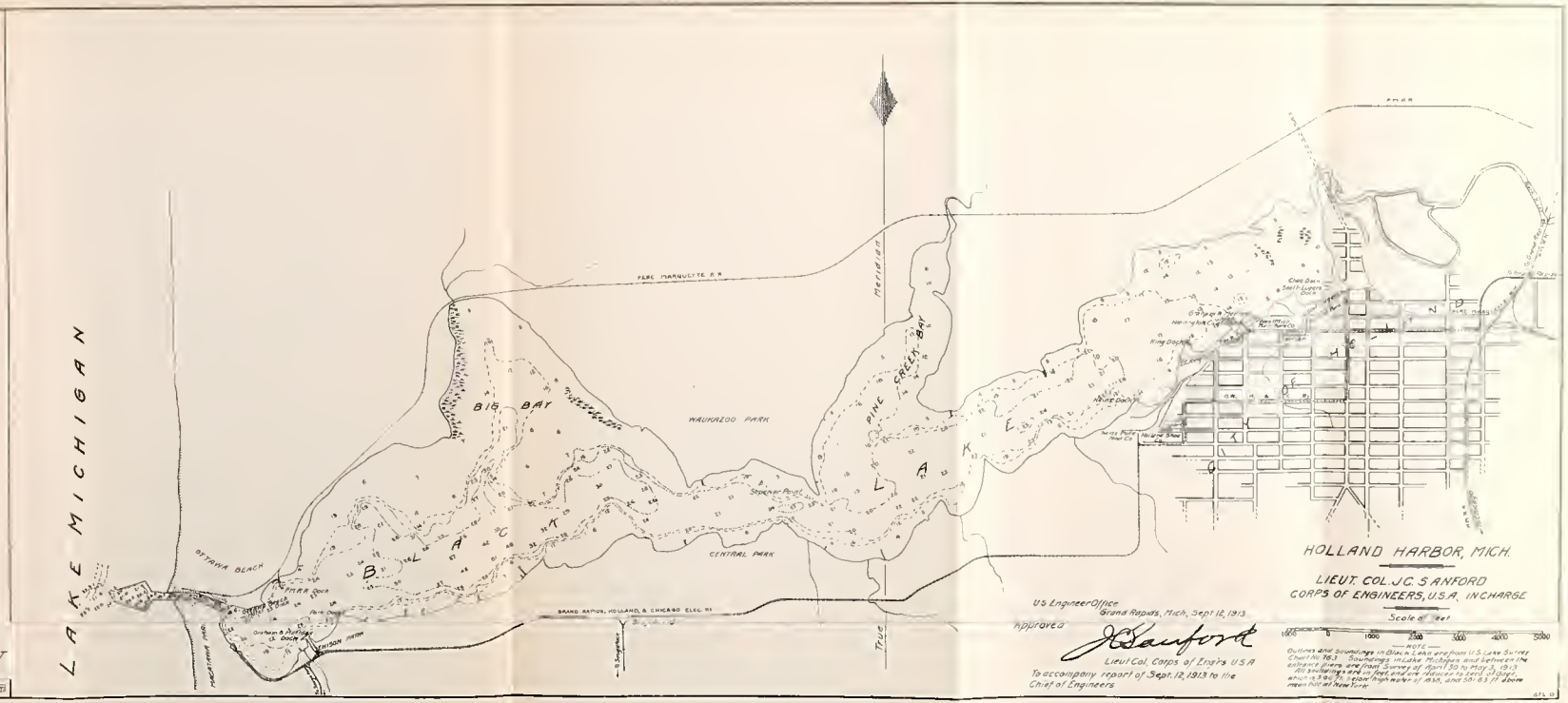


VICINITY SKETCH
Traced from
U.S. LAKE SURVEY CHART
No 7.



U.S. Engineer Office
Grand Rapids, Mich, Sept 12, 1913.
Approved
J. C. Sanford
Lieut Col, Corps of Engrs U.S.A
To accompany report of Sept. 12, 1913 to the Chief of Engineers

NOTE —
Outlines and soundings in Black Lake are from U.S. Lake Survey Chart No 76.3. Soundings in Lake Michigan and between the entrance piers are from Survey of April 30 to May 3, 1913. All soundings are in feet and are reduced to zero of plane which is 579.5 feet high water of 1838, and 581.63 ft above mean tide at New York.

GS. D.

63D CONGRESS, 2d Session. } HOUSE OF REPRESENTATIVES. { DOCUMENT No. 817.

BLACK LAKE HARBOR, MICH.

LETTER

FROM

THE SECRETARY OF WAR,

TRANSMITTING,

WITH A LETTER FROM THE CHIEF OF ENGINEERS, REPORT ON PRELIMINARY EXAMINATION OF BLACK LAKE HARBOR, MICH., WITH A VIEW TO OBTAINING A UNIFORM DEPTH OF 21 FEET FROM LAKE MICHIGAN TO THE TURNING BASIN OPPOSITE THE CITY OF HOLLAND.

MARCH 9, 1914.—Referred to the Committee on Rivers and Harbors and ordered to be printed, with illustration.

WAR DEPARTMENT,
Washington, March 9, 1914.

The SPEAKER OF THE HOUSE OF REPRESENTATIVES.

SIR: I have the honor to transmit, herewith, a letter from the Chief of Engineers, United States Army, dated 7th instant, together with copy of report from Lieut. Col. J. C. Sanford, Corps of Engineers, dated September 12, 1913, with map, on preliminary examination of Black Lake Harbor, Mich., made by him in compliance with the provisions of the river and harbor act approved March 4, 1913.

Very respectfully,

LINDLEY M. GARRISON,
Secretary of War.

WAR DEPARTMENT,
OFFICE OF THE CHIEF OF ENGINEERS,
Washington, March 7, 1914.

From: The Chief of Engineers, United States Army.
To: The Secretary of War.
Subject: Preliminary examination of Black Lake Harbor, Mich.

1. There is submitted herewith, for transmission to Congress, report dated September 12, 1913, with map, by Lieut. Col. J. C. Sanford, Corps of Engineers, on preliminary examination of Black

Lake Harbor, Mich., with a view to obtaining a uniform depth of 21 feet from Lake Michigan to the turning basin opposite the city of Holland, called for by the river and harbor act approved March 4, 1913.

2. The present project for improvement of this locality, which is officially known as Holland Harbor, was adopted by the act of March 3, 1899, and as modified in 1905 and 1907 provides for a channel 16 feet deep, protected on the outside by two converging piers and on the inside by piers and revetments. The city of Holland is at the eastern end of Black Lake, about 5 miles from the entrance. The depths in the lake are generally in excess of 20 feet, except in the immediate vicinity of the city, where the depths are 12 to 14 feet. The district officer reports that there appears to be no present necessity for a uniform depth of 21 feet from Lake Michigan to the turning basin opposite the city of Holland; but he is of opinion that the locality is worthy of improvement by dredging an approach channel 16 feet deep as far as opposite the wharves, and by dredging a suitable turning basin, which would be necessary in order to utilize the deeper approach channel. The division engineer recommends that the extent and cost of the proposed work be ascertained for determination of the question of worthiness.

3. This report has been referred, as required by law, to the Board of Engineers for Rivers and Harbors and attention is invited to its report herewith dated December 30, 1913. The board states that the commerce of the harbor is small, when compared with expenditures already made, and shows a tendency to decrease. The improvement now contemplated is a channel for the purpose of reaching existing wharves and is in the nature of a terminal facility. The board is of opinion that this channel, if required, should be provided by local interests, and it therefore expresses the opinion that it is not advisable for the United States to undertake the proposed improvement.

4. After due consideration of the above-mentioned reports, I concur with the views of the Board of Engineers for Rivers and Harbors and therefore report that the improvement by the United States of Black Lake Harbor, Mich., with a view to obtaining a uniform depth of 21 feet from Lake Michigan to the turning basin opposite the city of Holland, or with a view to obtaining a depth of 16 feet as proposed by the district officer, is not deemed advisable at the present time.

DAN C. KINGMAN,
Chief of Engineers, United States Army.

REPORT OF THE BOARD OF ENGINEERS FOR RIVERS AND HARBORS

[Third indorsement.]

BOARD OF ENGINEERS FOR RIVERS AND HARBORS,
December 30, 1913.

To the CHIEF OF ENGINEERS, UNITED STATES ARMY:

1. This examination of Black Lake Harbor, Mich., is called for with a view to obtaining a uniform depth of 21 feet from Lake Michigan to the turning basin opposite the city of Holland. The

entrance to this harbor, officially known as Holland Harbor, has been under improvement for a number of years. The present project, adopted in 1905, as subsequently modified, provides for a channel 16 feet deep, protected on the outside by two converging piers and on the inside by piers and revetments. There had been expended to June 30, 1912, on this project, about $446,000. The total expenditures on the harbor have been in excess of $750,000. The existing project has been completed.

2. The present commerce is reported as amounting to 34,392 tons, and while previous statistics appear somewhat unreliable, they indicate that the commerce is decreasing. Practically all the waterborne commerce of Holland is carried on at the Graham & Morton Dock and the Harrington Dock. When these docks were built, the depth was sufficient, as light-draft boats were used. The desire for increased depth is due to the recent adoption of larger vessels of greater draft.

3. The city of Holland, with a population of about 10,500, is located at the eastern end of Black Lake Harbor, about 5 miles from the entrance. Except in the immediate vicinity of the city of Holland, where the depths are from 12 to 14 feet, the depths in the lake are in excess of 20 feet. There is no turning basin opposite the city of Holland, as might be inferred from the language of the act. No complaint has been made of the present depth of 16 feet at the entrance, and no demand is now made for a greater depth in the improvement desired at the city of Holland.

4. In view of difficulties experienced by the vessels now in use, the diminution in the number of light-draft vessels available, and the belief that the improvement of Holland Harbor by the Government is intended to provide for the water commerce of the city of Holland, the district officer is of opinion that the locality is worthy of improvement by dredging a deeper approach channel as far as the wharves and by dredging a suitable turning basin, both to a depth of 16 feet, to correspond with the present depth at the entrance to the harbor. To determine the cost, he recommends a survey, in which the division engineer concurs.

5. The board was not convinced from the information presented of the advisability of the United States undertaking the improvement contemplated by the district officer, and interested parties were so informed and given an opportunity of presenting statements and arguments to the board bearing upon the necessity and advisability of the United States undertaking this improvement, but no communications on the subject have been received.

6. The United States has provided at great expense a suitable entrance to Black Lake Harbor. This harbor or lake is about 5 miles in length, with ample depths except at the extreme upper end, opposite the city of Holland. The improvement desired is the dredging of a channel in this upper part of the lake and of a turning basin to be used in connection therewith. The commerce of the harbor is small when compared with the expenditures already made, and shows a tendency to decrease. The improvement now contemplated is a channel for the purpose of reaching existing wharves and is in the nature of a terminal facility, which, if required, should be provided by local interests. Moreover, there is nothing to indicate that if the work were done it would result in a commensurate increase in com-

merce. There appears to be no sufficient reason in this case to depart from the custom observed in the past at this harbor of limiting Federal expenditures to the entrance.

7. In view of the foregoing, the board reports that in its opinion it is not advisable for the United States to undertake the improvement of Black Lake Harbor, Mich., "with a view to obtaining a uniform depth of 21 feet from Lake Michigan to the turning basin opposite the city of Holland," or with a view to obtaining a depth of 16 feet, as contemplated within.

8. In compliance with law, the board reports that there are no questions of terminal facilities, water power, or other related subjects which could be coordinated with the suggested improvement in such manner as to render the work advisable in the interests of commerce and navigation.

For the board:

W. M. Black,
Colonel, Corps of Engineers,
Senior Member of the Board.

PRELIMINARY EXAMINATION OF BLACK LAKE HARBOR, MICH.

United States Engineer Office,
Grand Rapids, Mich., September 12, 1913.

From: The District Engineer Officer.
To: The Chief of Engineers, United States Army
(Through the Division Engineer).
Subject: Preliminary examination of Black Lake Harbor, Mich.

1. In accordance with department instructions of March 18, 1913 the following report is submitted on preliminary examination of Blacl Lake Harbor, Mich., with a view to obtaining a uniform depth of 2 feet from Lake Michigan to the turning basin opposite the city o Holland.

Provision for this examination was made in the river and harbor ac of March 4, 1913. The locality is shown in a general way on Lak Survey Chart No. 76 (Coast Chart No. 6, Lake Michigan, new), and i detail on Lake Survey Chart No. 763, "Black Lake and Holland." A tracing with vicinity sketch accompanies this report.

2. The mouth of this harbor, officially known as Holland Harbo Mich., is distant by water, measured between Lake Michigan entrance about 7 miles from Saugatuck Harbor on the south, 20 miles fro Grand Haven Harbor on the north, 94 miles from Chicago, and 86 mile from Milwaukee. This harbor has been improved by the Goverr ment by the construction of a channel about 2,600 feet in lengt connecting deep water in Lake Michigan with deep water at th west end of Black Lake. The latter lake is about 5 miles in lengt and about 1,000 to 3,000 feet in width, with a channel narrow places, having a depth of 20 feet or more, except in the vicinity the docks at Holland at the east end of the lake, where the dept are from 12 to 14 feet. The east end of the lake above the doc at Holland is shallow and marshy. While the city of Hollar extends to the head of the lake, the docks have been located, with view to getting sufficient depth of water, at a point considerab below the center of the city. On the north and south sides of t improved entrance channel from Lake Michigan, are respective

the summer resorts of Ottawa Beach and Macatawa Park; the former is the terminus of a disused branch of the Pere Marquette Railroad; the latter is the terminus of a branch of the Grand Rapids, Holland & Chicago Electric Railway, which branch connects it with Holland and thus with Grand Rapids and Saugatuck. The city of Holland is in Ottawa County and is the outlet of a very productive and well cultivated agricultural and fruit district. The population of Holland in 1910 was 10,490, and in 1900, 7,790. The population of Ottawa County in 1910 was 45,300, and in 1900, 39,670. Holland is one of the principal ports of Grand Rapids (a city having a population in 1910 of 112,570), being connected with it by the Pere Marquette Railroad and by the Grand Rapids, Holland & Chicago Electric Railway, which furnishes an excellent passenger, freight, and express service, its tracks being carried at Holland and at Macatawa to the wharves of the Graham & Morton Transportation Co. On account of the excellence of this service, a large amount of the traffic between Grand Rapids and Chicago goes via Holland. The most used wharves at Holland are those of the Graham & Morton Transportation Co. and the Harrington coal dock. The "turning basin opposite the city of Holland," referred to in the act, consists of the portion of Black Lake in front of the above-named wharves, the depths being, as previously stated, from 12 to 14 feet. While the wording of the act would seem to imply an existing turning basin opposite the city of Holland, having a depth of 21 feet, no such basin exists. No artificial turning basin has been constructed, nor is there any naturally deep area opposite the city of Holland, which is adapted for use as a turning basin and could therefore be properly so designated.

3. When the improvement was begun by the United States in 1867 there was a narrow channel about $5\frac{1}{2}$ feet deep between inexpensive pier structures built by local interests. The original project, adopted in 1867 and amended several times up to 1892, provided for a channel 12 feet deep from Lake Michigan to the outer end of Black Lake, with piers and revetments 160 to 213 feet apart. From 1867 to 1880 the United States built a total of 1,854 linear feet of piers and revetments on the north side and 1,691 feet on the south side. Up to March 3, 1899, there had been expended upon this project the sum of $304,215.30, of which $127,597.50 was for maintenance. The present project, adopted March 3, 1899, and modified in 1905 and 1907, provides for a channel 16 feet deep, with outside converging piers 300 feet apart at the outer end and 740 feet apart at the inner end where connected with the outer ends of the inside piers and revetments, with a clear width of about 205 feet at the outer end and 162 feet at the narrowest place. The works provided for by the approved project are completed and present operations are confined to maintenance. The expenditures upon this project from March 3, 1899, to June 30, 1912, have been $446,117.42, of which $131,109.43 was for maintenance.

The total expenditures as above, from 1867 to 1912, have been $750,334.72, of which $258,706.93 have been for maintenance. The report upon which the present project is based is published in full in the Annual Report of the Chief of Engineers for 1897, pages 2950–2951, and in House Document No. 272, Fifty-fourth Congress, second session; the Annual Report of the Chief of Engineers for 1905, pages 2176–2177, contains a drawing and description of the adopted plan.

4. The following are the commercial statistics for this harbor, for the calendar year 1912:

Entrances and clearances:		
Total	number	780
Steam	do	774
Sail	do	6
Tonnage		772,096
Freight in tons of 2,000 pounds:		
Received		19,199
Shipped		15,193
Total		34,392

Commercial statistics for former years, furnished largely by local parties, are believed to be so unreliable that a fair comparison of traffic by years, by the use of these figures, is not practicable. With the exception of an occasional vessel, carrying crushed stone, lumber, or coal, the present water-borne traffic is carried on by the boats of the Graham & Morton Transportation Co., operating between Holland and Chicago. The boats of this line vary in length from 214 feet to 291 feet, and in gross tonnage from 1,148 to 3,061 tons. The largest of the boats, the *City of Grand Rapids*, has a maximum loaded draft of about 15 feet.

5. The fluctuation of water surface is that of Lake Michigan, and in recent years varied from about 0.5 to 1.5 feet, during the navigation season, below mean lake level; temporary variations, due to continued strong winds from one direction, may at times cause a change of level of about 2 feet in either direction. The soundings given on inclosed tracing are reduced to mean lake level (for period 1860–1875, 581.63 feet above mean tide at New York City); the soundings in Black Lake are reduced from those of Lake Survey Chart No. 763, those between the entrance piers and in Lake Michigan are from survey of April 30–May 3, 1913. There are no bridges over the entrance or Black Lake.

6. In order to ascertain just what is desired, and the reasons therefor, a letter was written on May 13, 1913, to Mr. Austin Harrington, president Holland Board of Trade (copy [1] inclosed), to which Mr. Harrington replied on May 24, 1913, inclosing letter from Mr. J. S. Morton, president, Graham & Morton Transportation Co (copy [1] of reply and its inclosure accompanying). No public hearing was held, but a conference was held on May 21, 1913, by appointment with the harbor committee of the city council, of which Mr. Harrington is a member; Mr. J. S. Morton was also present. It was stated that these gentlemen represented the parties interested in the proposed improvement. It was learned at this conference that practically all the water commerce of Holland is carried on at the Graham & Morton Dock and the Harrington Dock. At the latter dock all freight vessels are allowed to land under uniform wharfage charge. This wharf is used by the municipality for landing crushed stone. All the coal brought to Holland by water is landed here and handled by Mr. Harrington. The fact was brought out that when the two docks mentioned were built, the depth of water in the approaches was sufficient for the boats then used. Since that time, larger steamers have been built by the Graham & Morton Co., which frequently ground in approaching or leaving the wharf; also that, fo

[1] Not printed.

handling coal at the Harrington Wharf it is becoming very difficult to secure vessels having a loaded draft of less than 16 feet. Mr. Morton stated that, with a greater depth of water in the upper part of the lake, his company would probably establish a coaling wharf, to which coal would be brought by vessel. It was also stated that both the Graham & Morton Co. and Mr. Harrington had done extensive dredging in front of their wharves, giving a depth of 16 feet for vessels to land. If these wharves have to be moved to a point farther down the lake, where better depths could be secured, it would not only involve large expense and a loss of the extensive improvements in the way of buildings and railroad connections made on them, but it would also carry them farther away from the center of the city, and thus be disadvantageous to the citizens. It was further learned at the conference that the depth of 16 feet in the entrance channel is satisfactory for present commerce, provided this depth is constantly maintained. No complaint was made in regard to the past maintenance of this channel. It was stated that a depth of 21 feet was asked in order to provide against shoaling and to insure a depth of 16 feet at all times, and that what was desired for the upper part of the lake was a dredged channel and turning basin, in which a depth of 16 feet could always be counted on.

Since the conference it has been learned that Mr. Harrington's reason for not bringing any coal in 1912 to Holland by vessel was that he was unable to secure a self-unloading boat of a size that could reach his dock. He states that the only boat offered him of this description was one that was too large. From all the information available in the commercial statistics for the years 1907–1912, the following coal has been received by vessel at Holland Harbor: 1,100 tons, 1,200 tons, 1,250 tons, 600 tons, 1,650 tons, and no tons, respectively, for the six years named. Of these amounts, Mr. Harrington received about 1,250 tons in each of the two years 1909 and 1911, the consignees for the other coal being unknown. It has also been learned from the Graham & Morton Transportation Co. that it has as yet no definite plans for either the location or the construction of a coal dock; but that it would be of suitable size, and located at a point most convenient for use by the steamers of this line, the coal to be received in cargoes of probably 1,000 to 2,000 tons per vessel load, but the quantity which it would be expected to receive annually is not stated.

7. At present there are no wharves owned by the public at which terminal facilities are extended to all on equal terms. The use of the Harrington Wharf by all freight vessels is permitted on equal terms, while small passenger steamers, etc., are allowed to land at this wharf without charge. There is at present no public space available for the construction of wharves. Public wharves could, however, when found necessary, be built below and above the two wharves mentioned, by acquiring riparian rights and filling in bights. There are no mechanical appliances for handling freight at the above private wharves. As all vessels are allowed to use the Harrington Wharf on equal terms, the construction of a public wharf does not now appear to be urgently required.

8. It appears that there is no present necessity of improving Black Lake Harbor, Mich., by securing "a uniform depth of 21 feet from Lake Michigan to the turning basin opposite the city of Holland." There seems, however, to be some reason for an improvement of less

magnitude. When the present project was adopted, there appears to have been a sufficient depth of water in the upper part of the lake to satisfy the needs of commerce. At the time the present project was adopted, and until about two years ago, there appears to have been sufficient depth of water to the docks at Holland for the boats then trading there. Within the last two years, however, on account of a low stage in Lake Michigan, and on account of the increasing size of vessels, and the dimunition in number of light-draft vessels available for carrying heavy cargoes, considerable trouble in connection with the small depth of water in the approach to the wharves has been experienced. As the improvement of Holland Harbor by the Government is intended to provide for the water commerce of Holland (including both the local commerce and a large amount of interstate commerce passing through that port), and as, under present conditions, the depths to that city are insufficient for economically carrying on that commerce, I am of the opinion that the locality is worthy of improvement by dredging a deeper approach channel as far as opposite the wharves, and by dreging a suitable turning basin, which would be necessary in order to utilize the deeper approach channel. A depth of 16 feet, which is the same as the project depth for the entrance channel from Lake Michigan, is, in my opinion, sufficient for present requirements. In order to estimate the cost of such work a survey is recommended.

9. There are no questions connected with water power or other related subjects involved in this examination.

J. C. SANFORD,
Lieutenant Colonel, Corps of Engineers.

[First indorsement.]

OFFICE DIVISION ENGINEER,
LAKES DIVISION,
Buffalo, N. Y., October 29, 1913.

To the CHIEF OF ENGINEERS:

1. Forwarded, concurring in the opinion of the district officer tha Black Lake Harbor, Mich., is not worthy of improvement by th United States to obtain a uniform depth of 21 feet from Lake Michi gan to the turning basin opposite the city of Holland.

2. If the alternative proposal herein discussed can be considered viz, that the existing 16-foot project for the improvement of Hollan Harbor, Mich., be extended to include an approach channel an turning basin at the city wharves, it is recommended that the exten and cost thereof be ascertained by survey, for determination of th question of worthiness of improvement.

3. This report was returned to the district officer, with commen for revision, on September 18, and was received back October 27 i this form, without change of original date, viz: September 12, 191

J. G. WARREN,
Colonel, Corps of Engineers.

[For report of the Board of Engineers for Rivers and Harbors se page 2.]

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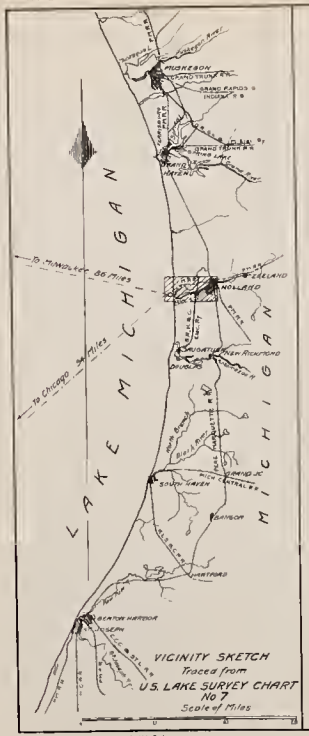

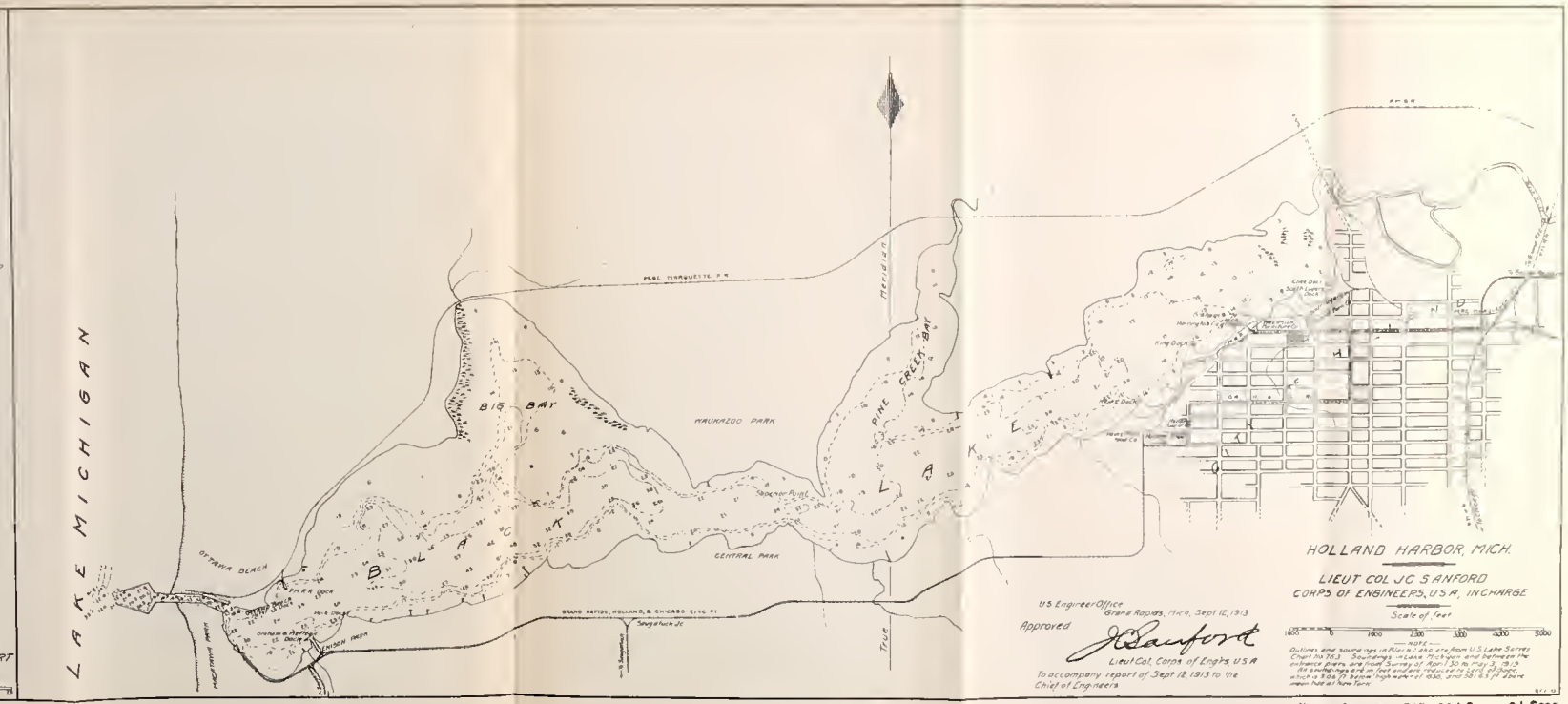

U.S. Engineer Office
Grand Rapids, Mich, Sept 12, 1913.
Approved
J C Sanford
Lieut Col, Corps of Engrs, U.S.A.
To accompany report of Sept 12, 1913 to the Chief of Engineers